

Claims

- [c1] 1. An audio processing circuit for receiving a first stream complying with a first standard and generating a second stream complying with a second standard which is a digital interface standard, the first stream includes a plurality of frames, each of the frames includes a plurality of fields, the audio processing circuit comprises:
 - a stream buffer for storing the frames of the first stream;
 - a stream recovering circuit electrically connected to the stream buffer for detecting at least one of the plurality of fields in the frames, modifying at least one of the plurality of fields according to the first standard, and generating modified frames;
 - a first buffer electrically connected to the stream recovering circuit for storing the modified frames; and
 - a burst circuit electrically connected to the first buffer for partitioning the modified frames into a plurality of payload sections, adding a preamble to each of the payload sections, and forming the second stream.
- [c2] 2. The audio processing circuit of claim 1 wherein the second standard is S/PDIF standard.
- [c3] 3. The audio processing circuit of claim 1 wherein the

first stream is retrieved from an optical storage disk.

- [c4] 4. The audio processing circuit of claim 1 further comprising:
 - a decoding circuit electrically connected to the stream buffer for decoding the frames retrieved from the stream buffer;
 - a second buffer electrically connected to the decoding circuit for storing decoded frames generated by the decoding circuit; and
 - a digital to analog converter electrically connected to the second buffer for converting the decoded frames received from the second buffer to analog signals.
- [c5] 5. The audio processing circuit of claim 1 wherein the decoding circuit and the stream recovering circuit are integrated into an audio processor of the audio processing circuit.
- [c6] 6. An audio processing circuit for receiving a first stream complying with a first standard and generating a second stream complying with a second standard which is a digital interface standard, the first stream includes a plurality of frames, each of the frames includes a plurality of fields, the plurality of fields include a sync word field, the audio processing circuit comprises:
 - a stream buffer for storing the frames of the first stream;

a stream recovering circuit electrically connected to the stream buffer for receiving expected positions of the sync words derived from the first stream, locating actual positions of the sync word fields by detecting neighborhood positions substantially close to the expected positions, modifying the frames according to the actual positions of the sync word fields, and generating modified frames;

a first buffer electrically connected to the stream recovering circuit for storing the modified frames;

a burst circuit electrically connected to the first buffer for partitioning the modified frames into a plurality of payload sections, adding a preamble to each of the payload sections, and forming the second stream.

- [c7] 7. The audio processing circuit of claim 6 wherein the second standard is S/PDIF standard.
- [c8] 8. The audio processing circuit of claim 6 wherein the first stream is retrieved from an optical storage disk.
- [c9] 9. The audio processing circuit of claim 6 further comprising:
 - a decoding circuit electrically connected to the stream buffer for decoding the frames retrieved from the stream buffer;
 - a second buffer electrically connected to the decoding

circuit for storing decoded frames generated by the decoding circuit; and

a digital to analog converter electrically connected to the second buffer for converting the decoded frames received from the second buffer to analog signals.

[c10] 10. The audio processing circuit of claim 6 wherein the decoding circuit and the stream recovering circuit are integrated into an audio processor of the audio processing circuit.

[c11] 11. A method for transferring a first stream complying with a first standard into a second stream complying with a second standard which is a digital interface standard, the first stream includes a plurality of frames, each of the frames includes a plurality of fields, the method comprises the steps of:
detecting at least one of the plurality of fields in the frames, modifying at least one of the plurality of fields according to the first standard, and generating modified frames; and
partitioning the modified frames into a plurality of payload sections, adding a preamble to each of the payload sections, and forming the second stream.

[c12] 12. The method of claim 11 wherein the first stream is retrieved from an optical storage disk.

- [c13] 13. The method of claim 11 wherein the second standard is S/PDIF standard.
- [c14] 14. The method of claim 11 further comprising decoding the frames of the the first stream, and converting the decoded frames into analog signals.
- [c15] 15. The method of claim 11 wherein the modifying step further comprises omitting at least one redundant bit if any redundant bit exists in the frames of the first stream.
- [c16] 16. The method of claim 11 wherein the modifying step further comprises changing a field of one of the frames of the first stream.
- [c17] 17. The method of claim 16 wherein the changed field is a copyright field.
- [c18] 18. The method of claim 16 wherein the changed field is an audio mode field.
- [c19] 19. The method of claim 11 wherein the modifying step further comprises abandoning at least one improper bit which is not capable of being modified to conform with the first standard if any improper bit exists in the frames of the first stream.

[c20] 20. The method of claim 11 wherein the modifying step further comprises modifying errors in the fields of the frames of the first stream.